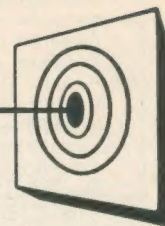


# Precision



# SHOOTING

VOL. 2, NO. 12

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APRIL 1958



After being defeated in the Seventh Annual Northern California Gallery Matches at Willows, California, by the USMC team, the Albany Rifle Club obtained revenge on the Marines in a rematch fired at the Albany home range in Berkeley, California. The Albany team fired their high score of the season, 1467, to beat the Marines' total of 1454.

The two teams in the above photo, are left to right: Back row, USMC—Capt. J. Riggs, Sgts. D. Wagner and J. Hill, Cpl. A. Dapp, Sgt. R. Davies, S/Sgt. E. Duncan, and C. Petersen (Albany).  
Front row, Albany Rifle Club—R. Bertram, G. Taras, F. Forester, F. Ward and M. Martin.

*a magazine for Shooters by Shooters*



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Editor—P. H. Teachout  
President—Henry W. Butterfield  
Vice President—Irven Mohnkern  
Treasurer—Dermot Reilly  
Secretary—P. H. Teachout

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## SHOOTING GAMES

Since we started this series with bench rest rifle shooting, and left it hanging in the air, we'll continue with that before going on to other types of shooting games.

The "Varmint Rifle" class competitions which are sponsored by the National Bench Rest Shooters Association, provide a competitive program for weapons which are also suitable for field use in varmint hunting. Rifles are restricted to a total weight of 13 pounds, which includes scope sight and accessories ready to fire. The rifle must be stocked for firing from the shoulder in normal field shooting. The rifle may be of any caliber. For custom built rifles, the barrel must not be shorter than legal length and there are maximum specifications for outside barrel dimensions (given in detail in the NBRSA rule book).

There is no restriction on the power of scope used (so long as the complete rifle and scope meet the weight requirements), since the competition is intended to prove the pure accuracy of the rifle, not necessarily under field conditions.

The NBRSA program for Varmint Rifle class in official registered competition is only two years old. The number of shoots for varmint rifle competition and the number of competitors increased considerably in 1957 over 1956, and it required smaller groups to win in 1957 than in 1956. All 1956 records were broken in 1957. The record 5-shot group at 100 yards made in 1956 was .3406 inch and at the end of the 1957 season it had been shrunk to .2268 inch. The 1956 5-shot group record of .6506 inch was dropped to .3846 inch.

An Eastern Region Varmint Rifle Championship was fired at Altoona, Pa. in 1957 and this event will be held at the same location in 1958. Many of the 1958 shoots throughout the country will program Varmint Rifle class matches in addition to unrestricted rifle matches.

It is quite probable that a majority of varmint hunter riflemen will not immediately become enthused over competitive shooting at paper targets, but this program for bench rest shooting does offer an interesting field for those hunter-riflemen who are seriously interested in improvement of the accuracy of their weapons and proving them in competition.

A good number of experienced bench rest shooters are turning to the Varmint Rifle class competitions and are finding it an interesting field for further experimenting. They are applying their accu-

acy know-how with the heavier rifles to the lighter rifles with remarkable success. This entry of experienced rest shooters into the light rifle field may cause some hunter-riflemen to hesitate at entering competition in this class. However, they should recognize that competing with these people with a fund of rifle accuracy know-how, observing their equipment and techniques, and, most important, asking for information from the more experienced competitors, can aid them greatly toward improving the accuracy of their own equipment for both competitive and field use.

There seems to be a growing desire for competitive bench rest shooting with rifles and scopes limited to calibers, scope power and types, and rifle weights normally used for big game hunting. Matches of this type have been held in several places. Matches of this type have been held in conjunction with other bench rest matches at Custer, South Dakota, for several years, and the groups shot have been growing smaller, year by year.

In the sporter matches at Custer they shoot 3-shot matches at 100 and 200 yards, calibers 6mm and larger, and hunting scopes limited to 6X. In their final 1957 shoot, last August, the winning 5 match aggregates at 100 yards were under minute of angle, and at 200 yards barely over minute of angle. I have targets before me, fired at that match with sporter rifles, with 100 yard 3-shot groups fired with 6mm measuring from quarter to half inch and one group with .30-06 which is barely over half inch.

The NBRSA has had under consideration a Sporter Rifle class program but lack of facilities for handling the record work on a national scale, plus lack of information from experience in conducting such matches has held up any beginning to date. More matches for Sporter Rifles conducted by local clubs, and reported, would aid the NBRSA in setting up a starting national program for this type of competition, when the Association is able to do so.

Modern competitive bench rest rifle shooting differs from all other competitive shooting in one important respect. In bench rest shooting the heavy emphasis is on the demonstrated accuracy of the rifle and ammunition, rather than on the shooting skill of the individual shooter. Shooting from rest is deliberately intended to minimize the human error in shooting, in-so-far as possible, in order that the maximum potential accuracy of the rifle and ammunition may be demonstrated. Bench rest competitions are essentially proving grounds which determine the success or failure of attempts to improve pure accuracy from rifles.

Bench rest shooting is sometimes called the gunsmith's shooting game, and that is in a measure true. However, the fact is too often overlooked that the majority of the bench rest gunsmiths who have contributed greatly to the improvement of rifle accuracy are amateur, do-it-yourself hobbyists who are perfectionists as well. Full time professional gunsmiths make up a small minority of the competitive bench rest shooters. The amazing improvement in accuracy demonstrated at bench rest rifle competitions during the past ten years is largely the result of spare time study, work and experimenting by these do-it-yourself hobbyists in their home work shops and on their home ranges.

The human element cannot be entirely eliminated, even in shooting from rest. Pure accuracy of rifle and ammunition, alone, will not win bench rest aggregates in competition under adverse weather conditions. In bench rest, as in other types of competitive rifle shooting, the top flight competitors are those people who have spent long hours in practice, observation and study to enable them to judge the effects of adverse weather conditions on the bullet's flight, and to make proper compensation for the conditions prevalent during any competition they engage in. Under ideal weather conditions, the best of bench rest competitors, shooting a rifle-ammo outfit with an average accuracy of three quarters minute of angle accuracy, would have a slim chance of winning over an ordinary good shooter using a half minute of angle average rifle and ammo outfit. But under adverse weather conditions, the same shooters with the same outfits, the more skillful shooter might reasonably be expected to win. It is that kind of a shooting 'game.'

Competitive bench rest shooting, with any class of rifle, will probably never become a major shooting game, in point of number of participants—but to a particular type of person it is the most completely fascinating and satisfying type of competitive rifle shooting he can imagine.

It is this writer's prediction that competitive bench rest shooting, in its present form of wide open competition, will endure and make moderate growth. Further, that in its present form of open competition with the barest minimum of restrictions in shooting rules, to provide incentive for continued striving for further accuracy improvement, bench rest rifle shooting will continue to exert an important influence on the trend of development of sporting rifles and ammunition. PHT

## THE TOURNAMENT CIRCUIT PRESLEY KENDALL WINS 22nd SMALLBORE MID-WINTER

### High Aggregates at St. Petersburg

Presley W. Kendall	3188-225
W. P. Schweitzer	3186-232
Loren W. Samsel	3185-207
Joe Steffey	3184-229
Herb Hollister	3183-218
High woman, Winifred Carr	3177-204

Presley W. Kendall, Myers, Ky., a college senior studying law who started his shooting career as a pre-teen-ager, beat the field of 134 shooters in the 22nd annual Mid-Winter Smallbore Rifle Tournament at St. Petersburg, Florida, to become the 1958 Champion. Kendall also won the metallic sight aggregate with a 1593-104.

According to newspaper clipping supplied by Dan Carroll, Bill Schweitzer and Herb Hollister were tied, with only two points down, going into the final day's shooting, with Schweitzer having a strong X-count lead. The two individual matches of the aggregate on the final day were both metallic sight events, in which youth forged ahead.

Schweitzer won the any sight aggregate with 1599-131 over Hollister with 1598-116 and Watt Redfield with 1597-124. Loren Samsel, Dallas, Pa., was second in the metallic sight aggregate with 1592 90, and Joe Steffey, a former Mid-Winter champ, was third with 1590-114.

The Blackhawk Rifle Club of Chicago won the Inter-State team match.

## COMING MATCHES

(We will list place, date, type and title of match, name of sponsoring organization, name and address of contact person, at a nominal flat rate of \$2.00 per insertion, prepaid with insertion order. Insertion orders must reach the Precision SHOOTING office, 83 Eastern Ave., St. Johnsbury, Vt., at least 45 days before date of match for single insertion orders. For multiple insertions, 30 days additional must be allowed for each additional insertion desired.)

**ALBANY COUNTY, NEW YORK:** July 26 and 27, 1958; Forbes Fifth Annual Long Range Tournament (600 and 1000 yards); write—Donald W. Winne, 20 Frederick Ave., West Albany, New York.

**ALBANY COUNTY, NEW YORK:** June 8, 1958; Forbes Sixteenth Annual Small Bore Rifle Tournament; write—Donald W. Winne, 20 Frederick Ave., West Albany, New York.

**MURRYSVILLE, PA.:** May 17-18; U. S. International Team Preliminary Tryouts for 50 meter small bore rifle (near Pittsburgh, Pa.); 12 concrete paved firing points, covered and enclosed; Murrysville Rifle Club, William R. Funk, R. D. 1, Box 2, Murrysville, Pa.

**MURRYSVILLE, PA.:** May 31 and June 1; Franklin Township Free Rifle Championships (open tournament); Cash and Trophy prizes; Murrysville Rifle Club, William R. Funk, R. D. 1, Box 2, Murrysville, Pa.

## WANTED 1,000

Competitive or potentially competitive rifle shooters to answer a comprehensive Questionnaire on their shooting preferences.

Send name and address to . . .

**Karner Range Assn., Inc.**

445 Western Ave., Albany 3, N. Y.

The Yankees beat the Rebels 3997 to 3994 in this annual sectional classic.

Nearly one third (41) of the competitors were from the military services and they made nearly a clean sweep of the aggregate class wins from Expert on down. Allen Davis, Ft. Mead, Md., high expert with 3177; P. J. Vigoletti, Fayetteville, N. C., high SS with 3165; Capt. J. B. Bryant, Ft. Lee, Va., high Mks with 3159; and F. J. Takach, Ft. Meade, high unclassified with 3156. Lt. John Herr and Lt. James Eberwine from Ft. Benning, Ga., won the 50 meter two-man team event with a 400-32 (Eberwine is a former Ohio Junior Champ).

## PRODUCTION OF THE M14 RIFLE

The Army-Navy-Air Force Register announces that production of our new service rifle, the M14, will begin at Springfield Armory in the spring of 1959. Also in the spring or early summer of 1959 commercial production of this rifle (which will replace the Garand M1, the carbine and the sub-machine gun) and of the M15 which will replace the BAR, will begin. The Army is already producing the 7.62mm NATO cartridge fired by both weapons.

The Ordnance concept is to set up pilot production lines for these weapons in order to iron out the inevitable 'bugs' that come up when an R & D or development item goes into a commercial type production. T. W.

## THREE DAYS

# CAMP PERRY

## ANY RIFLE

Ninth N. C. O. Championship Rifle Matches  
DECORATION DAY WEEK-END, May 30-31-June 1st.  
Open to riflemen anywhere. Cabin, cot, mattress—No charge. One day practice on all ranges. 200-300-600-1000 yds. Tell your friends—Entries close May 10th. Write for program.  
ASHLAND RIFLE CLUB, Herb E. Witmer, Program Secy., 622 Ohio St., Ashland, Ohio

## ASTONISHING SHOOTING PERFORMANCE OF FIFTEEN YEAR OLD CONNECTICUT BOY

Fifteen year old Joe Skrzyniarz is king of Connecticut gallery riflemen, in both senior and junior divisions, with an all-time record score in both cases, and with a shooting performance that is believed never to have been equaled in the United States.

Joe, who served as a target runner at the Connecticut State Gallery Match in New Haven, March 7-8-9, 1958, went down stairs to one of the gallery ranges in the Winchester Club House at 9 AM Saturday morning to fire his score as a member of the Silver City Rifle Club of Meriden, Conn. senior rifle team. Shooting scope sights, Joe fired a possible 200 score for the five shots in each of four positions course to win the Connecticut SENIOR Gallery Rifle Championship with a new record score for this event.

Changing to metallic sights, he went onto the firing line in the following relay, at 9:30 A. M., to shoot as an individual competitor in the Junior match. He fired 100 prone and 100 standing for a 200 possible to win the Junior Championship with another new record score. Then Joe went back to his chores of running targets between the statistical offices and the ranges for the remainder of the tournament.

Only quiet, supreme confidence in one's ability to shoot tens could result in such a shooting feat in the intense competition against many of the best gallery riflemen in the East at this big match—the mark of a real champion. This performance was simply a glorious climax

to a successful season of shooting for Joe. Shooting with the Meriden senior team in the Nutmeg League, Joe has fired four offhand possible 50 scores in league matches during the past season.

Joe Skrzyniarz started his shooting only a year and a half ago at Notre Dame High School in West Haven, Conn. When his family moved to Meriden, his school there, Wilcox Tech, does not have a rifle team. But Joe then came under the wing of Julius Guindell of the Silver City Gun Club, who has coached and guided him in his shooting. Incidentally, the Silver City team that Joe was a member of finished in 36th place in a field of 129 teams and his coach, a team-mate, fired a commonplace 186 score.

Skrzyniarz's shooting rather overshadowed the other record breaking shooting at this 27th annual Connecticut State Match. The entry at this claimed 'World's Largest Indoor Rifle Tournament' totaled 1476, of which 550 were senior shooters and 926 were juniors.

Enfield Rifle Club (Conn.) fired a team score of 775 Saturday evening to tie the previous record, but almost at the very close of the match the Manhasset Musketeers (New York) boosted the record by 5 points for a winning 780 X 800. Rockland Rifle and Pistol Club (Mass.) were third with 774.

Camp Kittatinny team of Orange, N. J., boosted the junior team record by 4 points with their 765 score for 4 man team shooting the 10 prone, 10 offhand course.

Priscilla (Jill) Haig of Middletown, Conn. beat the previous women's record by 1 point with her winning 196.



Connecticut Senior and Junior State Gallery Rifle Champion 15 year old Joe Skrzyniarz being presented the trophies by Connecticut Rifle & Revolver Association secretary J. Russell Lent.



## A REPORT ON THE CALIBER .429 HARVEY MAGLASKA CARTRIDGE TESTS AND DEVELOPMENT WORK

By Mason Williams

It is very gratifying to lay out a project on paper and then work it through only to find the most careful estimates are under-estimated and the full potential has never actually been appreciated. This is what happened when James Harvey of Lakeville Arms, Inc. and I commenced working with the cal. .429 Harvey Maglaska. When we started, both of us would take a velocity of 2450 fps using a 250 grain bullet and pressures of 50,000 pounds. We would have settled then and there. But as work progressed, we suddenly discovered that we had something far beyond our wild-est estimates. But I am getting ahead of my story.

I like to feel that this all started when I was talking to one of the Canadian Conservation Department men. He mentioned that so many hunters came into the area carrying high velocity rifles of the cal. .270 and cal. .257 Roberts class. Most of the shooting in that area is well under fifty yards and a heavy brush bucking, game stopping bullet is necessary. We talked for some time about this. He agreed that rifles of the cal. .45-70, 50-110, 40-82 class would be ideal for hunting in those areas. I have always felt that a rifle should be chosen to do the job that must be done, selecting a rifle for both the game and the country.

I have been shooting for over thirty years and I cannot subscribe to the one-rifle-for-all-game idea. I have watched the growth of the light bullet, high velocity trend with concern. These high velocity rifles are excellent when used for what they are designed for, but they are not adapted to close range, brush shooting. I believe that any real hunter will agree that he has shot ninety per cent of his game within two hundred yards. And most of that game was shot closer to one hundred yards. Because of this, I felt that what was needed was a light weight, large calibre, short range brush rifle that would give the average hunter plenty of knock-down power plus brush penetration. If the hunter could identify his game through brush, then he should be able to drop it due to the weight of the bullet and its ability to penetrate brush.

This was my thinking, when some time later, during the testing of cal. .44 magnum bullets swaged in Jim Harvey's dies, I mentioned to Jim that it would be nice if I could swage a bullet, load it into a powerful cal. .429 cartridge and then go right out and shoot a deer or bear. From then on, it was Jim's baby and he deserves all the credit. Shortly afterwards, we actually discussed this potential cartridge.

Before long, we laid down the following specifications. First of all the cartridge should be cal. .429, which is true diameter of the cal. .44 special and magnum bullets. Next, it must be built around the strongest possible case to provide a maximum safety factor. Also, there must be no headspace problem, such as those commonly found in modified cartridges like the cal. .400 Whelen.

Just before Christmas of 1956, Jim showed me four or five cartridges that he had been working with. They were cal. .44, they used the cal. .300 H&H magnum

case which not only eliminated headspace difficulties entirely, but also gave more than adequate strength. These cartridges had a small, but definite shoulder.

We both knew that without sufficient velocity we were wasting our time. As a result, Jim had four cases made up, identical except for length. One was an extremely long case, one that would function only in a long magnum action. The next longest case was still definitely in the magnum action class. The next one was about the length of a cal. .30-06. The shortest one appeared to be much too short to provide the velocity we wanted, which we felt should be about 2500 fps with a 250 grain bullet.

I immediately objected to the two long cases on the grounds that using such a cartridge would require a magnum action. Magnum actions and magnum rifles have always been expensive and the market is definitely limited. We were looking for a powerful, short range cartridge that could be handled by an ordinary rifle action. In other words, in my opinion, we wanted an extremely powerful cartridge that any standard, unaltered Springfield, Enfield, Mauser, or model 70 action could handle. After some discussion, Jim agreed that this would be an ideal arrangement, so we discarded the long cartridges and Jim concentrated on working out a cartridge of the correct length. This meant that there would be no major rifle modification or expense connected with barreling and making up a rifle for this cartridge. The only modification would be the bolt face and extractor, both of which are relatively simple operations.

The question then arose as to whether this type of cartridge would have the capacity to give high velocity with a 250 grain bullet without excessive pressures. We knew from tests that I had been running that Jim's bullets gave higher velocities with lower pressures than conventional bullets. I know nothing about bullet design. However, Jim's bullets had always given consistently good accuracy with minimum pressures. This appears to be due to his body bearing design that reminds me of the shells used in the big naval rifles. Actually, Jim's bullets have a relatively small body bearing and I would like to inject a word of caution now. All the cal. .429 tests that I ran, used Harvey bullets. I have no experience using other makes of bullets, since one of the fundamental thoughts behind this cartridge was the use of home made bullets. As I will explain later, Vern Speer entered the picture and no doubt, because of his familiarity with this testing, will eventually produce bullets for the cal. .429 Harvey Maglaska cartridge.

There is no question in my mind, but that conventional bullets will substantially increase pressures. - At the end of the tests that I ran for Jim, I was working with near maximum pressures and I cannot recommend using conventional bullets without first completing an exhaustive test.

We did feel that it would be possible to obtain sufficient velocity without excessive pressures. So, after considerable estimating work and thought, we selected one cartridge design and Fred Huntington made up dies for this cartridge. Also, by this time, Jim had received a shipment of one hundred Norma, cal. .300 H&H magnum cylindrical cases. These cases were then cut, swaged down to correct dimensions in the Huntington

dies, then neck annealed. Assuming that these cases could be obtained rapidly and easily, both Jim and I were extremely extravagant in using and working with these cases.

In the meantime, I had contacted the Atkinson and Marquart Rifle Company regarding cal. .429 barrels. We were not certain precisely what twist would work best and had planned to leave this problem up to their experience. Unfortunately, they could not make delivery for quite some time. During my very interesting correspondence with Colonel Raymond L. Harrison, the big game hunter, he mentioned that Sam May of the Apex Rifle Company had always given him excellent barrels and he suggested that I write Sam May. I did this. He gave me a very reasonable delivery date on two barrels with a 1 in 18 twist, which he felt would handle the heavier bullets. Because of this delivery problem, we have used the Apex barrels exclusively since that time and have found them to be of the highest quality. The bores are very smooth and clean. Being completely stress relieved they will not walk. They are stable, hot or cold. We were interested in results and in establishing as many constant factors as possible, as quickly as possible. We were very pleased with these Apex barrels.

Both barrels were fitted into Mauser actions, one a magnum action that formerly was a cal. .300 H&H Magnum. The other rifle had been a 7m/m on a ZB Mauser action. Donald Cassavant of Hyde Park, N. Y., handled all the gunsmithing work. He is a precision, one job man and an individualist who absolutely refuses to do production work. It was for this reason that we asked Don to handle the tooling up and gunsmithing on the first two or three rifles. With only an unfired cartridge to work from, he made half reamers and chambered the two rifles mentioned above. With the exception of some polishing and very slight turning, no other work was done on either barrel, excepting, of course, the threading and chambering. Both barrels were cut to twenty two inches.

It was also necessary to trim the extractor on the standard action, plus smoothing and enlarging the bolt face to take the magnum cartridge base. Nothing was done to the cal. .300 H&H magnum action since this was factory made to handle the cal. .300 H&H cartridge.

When Don finished his work and re-bedded both actions in their original stocks, the completed rifles were light in weight, short and easy to handle. Both barrels were bedded in the stocks, they were not free floating. Neither rifle had recoil pads. Both rifles had special triggers that could be set if desired. I later discovered this set trigger to be an excellent thing for getting off a heavy rifle without anticipating recoil. On the rifle that I used, I had a Lyman six power internal adjustment scope on Buehler mounts. The other rifle had a Redfield mount and a Lyman ten power scope.

Up to this point, we were working strictly on hope. Everything appeared on paper to be all right. It was now a question of going out and finding out what these cartridges would actually do. Our next step was to determine what components should be used, but before I get into that, I would like to explain several points.

I have two entirely separate ranges on which accuracy work can be done. The first range is two hundred yards long with bench rests at one hundred yards and at two hundred yards. I can also arrange to fire groups at any intermediate range through using portable target frames. All my shooting is done from bench rests using sandbags. Most of my groups are ten shot groups, since I am a firm believer in finding out precisely what a combination of rifle and ammunition will do.

My other range gives me a full four hundred yards. Again, the firing point is a bench rest with sandbags. This range is wide open, on the top of a hill with a view for miles in three directions so that wind is a definite factor, whereas on the short range wind is no problem. Permanent target frames are set up at three hundred meters and four hundred yards, with portable target frames giving me any intermediate range. Due to the contour of the land, I have a maximum safety factor and can handle rapid fire or automatic fire with complete safety.

Much of the firing with the cal. .429 was done from the shoulder to really determine the recoil factor particularly with the final heavy loads. Firing from a bench rest increases the feel of the recoil and gives the shooter an exaggerated idea of recoil. As a matter of interest, both cal. .429 rifles were fitted with recoil pads after about six weeks testing. This cut recoil down substantially, making both rifles easy to handle and shoot from the shoulder.

Many shots were fired at trees, logs, magazines and etc. to determine relative penetration and expansion. There were many shots fired that do not appear on the following schedule. It has been my experience that in developing loads for rifles or handguns, it is important that the maximum range at which that particular load will be used be determined in advance. In other words, a load that shoots well at one hundred yards may be very inaccurate at 200 yards. In setting up the cal. .429 on paper, we settled on a maximum range of two hundred yards. As a result, very little important testing was done at one hundred yards.

If a load will shoot accurately at two hundred yards, I know that it will be accurate at one hundred yards or at fifty yards. A hunter using an accurate two hundred yard load knows that if he suddenly comes upon game at ninety yards that both the cartridge and the rifle will perform correctly.

On the other hand, the same hunter coming out of heavily wooded country onto the shores of a lake, should definitely stalk game seen three hundred and fifty yards across the lake. There is no certainty that the load will perform properly at three hundred and fifty yards. At the risk of becoming repetitious, I would like to re-emphasize that I do not feel there is such a thing as an all-around, all-game rifle. Both rifle and load must be chosen with many factors carefully considered.

Since most game is taken at ranges under two hundred yards, the load development work that I did on the cal. .429 was based on a maximum range of two hundred yards. This will give the average hunter a rifle-cartridge combination that would be efficient and correct at any reasonable range.

Another factor that gives the aver-

age hunter using the cal. .429 a great advantage over so many so-called Magnum rifles is the fact that to date barrel wear and throat erosion are not visible. In the past, high velocity magnum rifles required special steels that made the rifles quite expensive or else the barrels had to be replaced at frequent intervals. To date it definitely appears that the cal. .429 is easy on barrels and throats. It is another tribute to Jim's foresight and design.

Now, returning to the actual test firing of the two completed rifles. Before we could load and fire, we had to determine what components should be used.

Powder was the big question. I knew that #4350 would not burn properly in that big case. It held 66 grains of #4350, but I was never successful in using this powder.

The next best on paper was #4064. The case held 63 grains to the shoulder. Being a cautious soul and having blown up my share of rifles, I decided to commence loading with 53 grains of #4064 and a 250 grain soft point bullet, Remington #9½ primer, and increasing one grain per test cartridge on up to 58 grains. On reaching 58 grains the barrel was not even warm. Unburned powder either spewed out the muzzle or remained in the barrel and action. I then went to 59 grains and cautiously worked my way in one half grain steps on up to 65 grains. It was a completely unsuccessful test. Nothing happened. Even with a compressed load the powder would not burn properly.

I then tried #3031 powder, using the same components and commencing at 57 grains and working through half grain increases up to 63 grains. The first signs of pressure and partial success in burning the powder properly showed up at 63.5 grains. I then went on up to 64.4 grains.

Targets were fired with 62.7 grains, 63.0 grains, 63.3 grains, ten shot groups. Then additional targets were fired with 64.5 grains and 64.8 grains. Pressures dropped and accuracy was only fair. So far all shooting had been done at 100 yards. I finally decided that something had to be done, so I went on up in gradual steps to 65.4 grains with no appreciable increase in pressures or accuracy. I then reloaded using 66.0, 66.5, 67.0, 68.0 and 69.0 grains, ten shot groups, continually hoping that something would develop.

Recoil was similar to a cal. .30-06, accuracy remained only fair; by that I mean four to five minutes of angle at two hundred yards. Pressures continued low with no signs of flattened primers and no difficulty in case extraction.

Very few people realize that all the ammunition companies have two types of large rifle primers. We had been using the standard Remington #9½ primers. When these companies load magnum ammunition such as the cal. .300 H&H, .375 H&H and the .458 Africa, they use what we term the Hot Magnum primer. This primer ignites the powder in the large magnum cases much more evenly than the weaker large rifle primers. This Hot Magnum primer is not sold commercially due to the inherent danger of giving excessive pressure if used in cases smaller than the cal. .30-06. Furthermore, all loading data that is available today is based on using the standard commercial large rifle primer. If these loads were to

be used with the Hot Magnum primer, rifles would be blown up and people injured. Used correctly, in large magnum cases, with a compensating reduction in powder charge, these primers give excellent results.

Jim called me and we had quite a discussion regarding results or lack of results that I had had. He suggested trying the Hot Magnum primers and we commenced using Federal #215 primer. Using this primer is the equivalent of increasing the powder charge ten to fifteen per cent.

**All data on the cal. .429 from this point on is based on using this Federal #215 primer.** The first load with the #215 primer was 65.0 grains of #3031, 250 grain bullet. This combination gave good accuracy, the powder burned cleanly for the first time and the report had a snap to it, replacing the dull boom.

Out of curiosity, I tried 67 grains of #4350. It did not work out, either in pressures or accuracy.

The next step was to try HiVel #2, commencing with 60.0 grains and going on up to 62.0 grains. This load compared favorably with the 65.0 grains of #3031. On the other hand it just did not handle right, so I dropped it.

Shortly afterwards, I fired three more groups using #3031 powder. This time I started with 65.0 grains to double check both trajectory and accuracy. After confirming my first findings, I then went on to 65.5 and 66.0 grains. Groups became evenly tight and the difference in impact between one hundred yard groups and two hundred yard groups was about three inches. Handling was good. Groups ran about three minutes of angle. I then went on up in steps to 68.0 grains of #3031, using both the 225 grain bullets and the 250 grain bullets. I then went to 68.3 grains with the 250 grain bullet. This load gave good accuracy, clean handling and stiff recoil.

In the meantime two things had happened. Jim had explained to Vern Speer the problems that we were running into and that we needed some heavy jackets for these rifle bullets. Speer came up with an excellent jacket, reinforced at the base inside the jacket so that it would take any velocity. In addition, Jim crimped all the jackets into the lead core. Cores—by this time—were either 1% or 2% antimony.

The other thing that had been going on was a running test by one of the country's top ballistical laboratories covering both velocity and pressure. They were using a long Apex pressure barrel for their tests. It was a very practical arrangement. I would come up with what I felt was a good load and then the data would be immediately phoned down and within a few days we would have specific velocity and pressure data. As an example, using the 250 grain bullet, 68 grains of #3031, velocities were about 2790 fps and pressures 42,000 pounds. I had sensed that velocities were high, but I could also tell that pressures were low, so that I was continually underestimating velocities and overestimating pressures. Now that we were working together so well, we at this end had something to go on and we were just commencing to realize that we were just starting to tap the true potential of the cartridge.

My next step was to try 64.3 grains of #3031 and the 300 grain bullet. Accuracy was excellent. On the other hand, it was becoming clear that #3031 was also too slow burning.

Because we had such close control  
(Continued on Page Thirteen)



Rivers Grip on a Colt .45 pistol. Note how the grip hugs the hand. The .45 Auto looks longer than standard because it has a Rivers muzzle brake on it.



## ONE-MAN BOON FOR HANDGUNNERS

By William E. Peterson

There are a number of individuals of the gunsmith ilk, who by their own unaided efforts have greatly helped the tribe of pistol shooters. Joseph Rivers of 4 Pine Point Rd., Rowayton, Connecticut, is an outstanding example. Mostly these benefactors turn their efforts to "accuratizing" automatics, smoothing triggers, or correcting balky actions. All of which is precision work, and most valuable. However, it has remained for Joe Rivers to do something really worth while in the matter of pistol and revolver grips.

There are quite a few well-designed grips on the market, almost any one of which is apt to be a big improvement over the standard article supplied by the gun manufacturers, although some of the latter are now beginning to see the light, and give us something apparently adapted to the human hand rather than the prehensile tail of the anthropoid ape. But Joe Rivers has taken a long stride

forward with the basic conception that no two hands are alike, and for close-group target shooting especially, maximum results are obtained only with grips made specifically for the hand that uses them.

There are folks who will not agree with this dictum. But just remember that some years back if a man's eyes began to fail, he could walk into a store and try on various pairs of spectacles until he found one that seemed to fit his eyes. 'Seemed to fit' is right, because it was only by accident that he could get the same sight aid provided today through the applied science of optometrists. Today you use prescription glasses. And if you are a shooter, the chances are you specialize even farther, and use the services of an optician who is also a shooter, such as W. H. Belz of 15 E. 40th St., New York City.

Admittedly, prescription - ground glasses are a modern essential. Joe Rivers maintains the prescription-built grips are equally essential. The fact that three thousand (more or less) users of Rivers Grips back him up, lends weight to his claim.

This man Rivers is in many ways unusual. He is an original thinker, as evidenced by his working out this grip stuff, and developing methods that put specially tailored grips on what is almost a production basis. In matches he shoots a revolver double-action, which is certainly not orthodox. He has devised a muzzle-brake for .45 automatics that is an actual extension of the frame, and besides reducing recoil, helps to center the front of the barrel. He has been a successful competition shooter for more years than he likes to count, having been a member

of the U. S. Dewar Team three separate years, and made two world's records, one with pistol and one with rifle, the latter lasting only from 10 A. M. to 4 P. M., the same day, as he ruefully tells, when a Marine shooter went him one better. Of later years Rivers has competed in all the big eastern pistol shoots from Quebec to Miami, in the course of which he has built up his 'tailored' grip business amazingly.

This is largely due to the grips themselves, as well as to Rivers' sales efforts. Apparently after a handgunner has had a pair on one of his guns, he cannot rest until he has Rivers Grips on all the others. Some shooters have as many as seven or eight.

The big characteristic of these grips is a 'glove' fit on the gun hand. Now, a glove has 'give' to it, but good rockhard walnut has none of that tractable quality. After an approximate fit has been gained, the wood must be carefully gouged or sanded away here and there, very slowly, with the interested shooter standing by and occasionally trying the fit. Gradually something near a perfect fit emerges. Even after the shooter is satisfied, Rivers usually finds some point or area which he thinks should be further corrected. Then he will say, "This is just a rough fit you know. Take it and shoot it awhile, then let's have it back in a week or so, and we'll make any changes you want, and polish it up."

Naturally all this is a long-winded business. Every set of grips is a special job. Volume production methods are out. Except for the fact that Rivers is a very fast as well as precise craftsman, the grips would have to cost much more than the \$20 per set that he charges. Further, he has developed certain special equipment, such as a large wheel with inserted cutting teeth driven by a powerful motor, that hogs out the wood at a rate which would appall the average wood worker. He uses narrow abrasive belts, with long distance between driving wheel and spring-loaded idler, and by forcing the work against the unsupported belt makes it conform to the work contour. A big stock of milling cutters and routing tools, many of which he has made to his own design, helps to speed things up.

The success and popularity of these grips has led Rivers to plan equipping his big station wagon with a generator and power tools to enable him to serve shooters in the field, at the many pistol shoots he attends.

What's the answer? First, the very accurate fit of these grips. Second, the wide areas of the hand which they support. It may be that this support cuts out some of the muscular action ordinarily used in gripping the gun, thus eliminating some of the tremors which are apt to accompany muscular effort. In other words, the hand is more nearly relaxed than is usually possible.

There is the familiar saying that "clothes make the man"—presumably meaning that the well-dressed man will act with maximum assurance in certain circumstances. It might be said that Rivers Grips make the shooter, since the intimate feel of gun and hand certainly does instill confidence. As one shooter said, "When you get snugged into that grip, you feel like you can't miss that ten-ring." Well, you can, of course, but perhaps not as often as you did before. At least, that's what shooters say.

(Editor's note: Bill Peterson is a competitive shooter of long experience, an Expert with both pistol and smallbore  
(Continued on Page Twelve)

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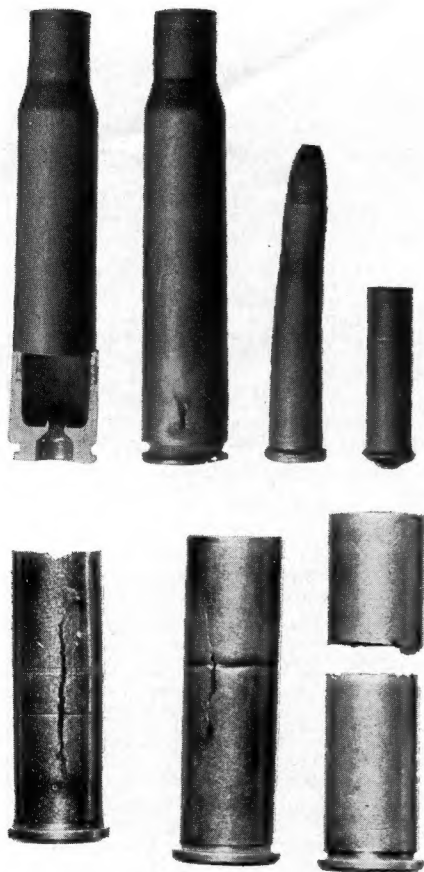
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## FACTORY AMMO DEFECTS

By Kent Bellah

Even at current prices, commercial ammunition is one of the marvels of this age. It requires hundreds of operations, inspections and tests, starting with the raw material and later the components and packaging. Quality control accounts for more than half the cost, and all makes have a high AVERAGE quality. Out of billions of rounds a few duds turn up, like a bad apple in a barrel, and a few thousand rounds will be below standard. Additional thousands will have some non-uniformity the average shooter will never notice without firing for groups.

Minor defects include under and over ignition, generally traced to the primer, that contains more or less of some ingredients or too much or too little compound. There is a pressure and velocity variation, case and bullet variations, and a combination of factors that prevent absolute uniformity. Even age and/or storage conditions are a factor. Some shooters never detect a defective round. These trusting souls charge misses to their own inaccuracy, sights or gun, where it generally belongs. Factory fodder is better than crummy handloads and inferior to good ones. As for price, reloads cost as little as \$15. per 1,000, while factory .38's cost \$92. and .44 Magnum's cost \$155. A handgunner doing intensive practice may fire more than 10,000 rounds per year, which makes the factory product prohibitive for most of us. A 30-06 shooter may flinch at the \$227.50 price tag on 1,000 factory loads when cast bullet practice ammo can be made at about the same cost as handgun reloads.

Over the years I've found hundreds of factory "goofs." Some lots have oversize heads, especially in revolver cartridges, which is quite irritating when they won't go in standard dimension shell holders. Case length variation is



accepted as "standard," and good handloaders always trim cases. Case neck thickness variation is also common, and is detected with a wall thickness mike, or the inexpensive mike conversion I wrote up in the December, 1955 issue of the old *Shooter's News*. Such cases, and they are plentiful, can be brought to uniform dimensions with the Forster Outside Neck Turner Accessory, which is used in the Forster Precision Case Trimmer. This trimmer uses a larger number of accessories than any other, including the Forster Inside Neck Reamer. Inside reamers will correct thick necks, but can not insure uniform thickness. The outside gadget will do both jobs, and do them well.

Let's view a few horrible examples of factory fodder I've found. Photo No. 1 shows a sectioned rifle case with a defective primer pocket web. This cushioned the blow of the firing pin, gave a dangerous hangfire of several seconds, perhaps causing a shooter to miss a big deer. A good handloader would have detected it immediately. The next case has a serious brass defect near the head, which was internal before firing. This could slip past good inspection and could also be dangerous. The .22 Hornet cartridge wouldn't chamber. A doctor said it had Peyronnie's Disease, but it looks bent to me. The .22 R. F. blew out from an internal defect. The luck of the Irish was working when I fired it in a 1890 Winchester, which doesn't cover all the case head when locked up. I got a good charge of hot gas with powder and primer residue in the face without serious injury. Good thing it wasn't a hot center fire!

Photo No. 2 shows some .38 and .357 revolver cases made of brittle brass that cracked on the first firing with factory loads. Not very dangerous in a revolver, but not good. Note the .357 case that pulled apart at the over-deep cannellure. This lot number was so bad it was unsuitable for reloading, or even the first firing, as it was erratic. I found another lot of 500 rounds of .357 ammo that was below standard. Nearly all the case mouths split on the first firing, indicating defective brass in this area. A cannellure is unnecessary and weakens a case. It was wisely omitted by Remington when they developed the finest commercial revolver cartridge ever made, the .44 Magnum. It's also the best reloading number.

from minor to terrible. First is an off-

(Continued on Page Fourteen)

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## WICHITA, KANSAS SHOOT

Ten fired the unrestricted rifle at the first 1958 registered shoot at Wichita, Kans., March 9. Five 10-shot matches were fired at 100 yards but due to darkness and wet grounds the shooting was stopped after two 10-shot matches at 200 yards.

W. S. Coleman, Burleson, Tex., was high grand aggregate (.486 moa) and 2nd at 100 yds. (.426). L. F. Carden, Kansas City, Kans., was 1st at 100 yds. (.413) and 2nd in the grand (.496). E. R. Carson, Mincie, Kans., was 3rd in the grand with .532.

All the grand agg. winners shot the .222 cartridge. Coleman and Carden shot Hart barrels while Carson used a Douglas. All three used ball powder and Rem. primers.

Weather was overcast with wind of 18 to 28 mph.

Three shot varmint rifles, five 5-shot matches at 100 yds. and two at 200 yds. R. W. Heinen had small grand agg. of .738 moa and his small group at 100 yds. was .452.

## PROVE IT

There is considerable difference of opinion about the proposal to use best five of six matches at a range to compute aggregate averages. It seems probable that at the present time the reaction to this suggestion, both for and against, is based on pure speculation.

The 'bench rest way' of determining whether anything new is good or bad is to work out the idea and then 'prove it in competition,' for general adoption or rejection as the proof in competition dictates. So, why not use the bench rest way to determine if this 'best five out of six' suggestion is worth adopting or not.

There is nothing in our NBRSA shooting rules that would prohibit the trial of this suggestion on a local shoot basis in registered matches, if these simple precautions are observed.

If such trials are made the conditions would have to be clearly stated in advance in the shoot program.

Five consecutive matches at each range would have to constitute the aggregate for NBRSA record purposes, and might be either the first five or the

## REST RULE REVISION PROPOSAL

During the sessions of the Eastern Region winter meeting at Elmira, N. Y., in February there was discussion pro and con of the rule on rests for use in NBRSA competition. A committee was appointed to draw up a proposal for revision of the present rule, for submission to the national board of directors for their consideration.

The committee has now given a majority approval of the following as their proposal of revision:

**RESTS:** The front and rear rests shall be two completely separate units not attached to each other.

Any material and any method of adjustment may be used which does not conflict with the non return to battery position rule, which follows.

**NON RETURN TO BATTERY POSITION RULE:** The REST rules prohibit the use of any unit or combination of devices which allows the rifle to be returned to battery to such a degree as to avoid aiming and adjustment by the shooter between each shot.

It is the NBRSA President's suggestion that NBRSA members advise the director of the Region in which they reside as to their approval or disapproval of this proposal for revision of this rule. The home addresses of all directors are on this page.

For those who do not have a current rule book readily at hand, the present rule reads:

**"RESTS:** The front and rear rests shall be two completely separated units, not attached to each other. They may be made of any material, may have lateral or vertical adjustments or both.

**"Matched machine ways, guides, slots, etc., can be used on but one of the rests, either the front or the rear, but not on both."**

last five of the six matches at each range. But for the purpose of awarding aggregate prizes, and all aggregate rankings, for the specific shoot only, the best five of six groups fired might be used for computing the local shoot aggregate.

Since both methods of computing the aggregates would need be listed in the results bulletins for any such trial shoots (5 consecutive matches and best 5 of 6), there would be a direct comparison of the two methods for all competitors in the particular shoot. From such direct comparison from actual trial in shoots. NBRSA member competitors could have an experience basis for evaluation of the 'best five of six matches' suggestion for aggregate computation.

This writer is not against change, just because it is change. And neither does he favor change, 'just because it is change.' But if new ideas, or new ways of doing old things, are demonstrated to offer a reasonable prospect of benefit and improvement, then he favors an extended fair and general trial of the change.

So, in this case, it can be hoped that enough shoot sponsors will give this 'best five out of six' suggestion a local shoot trial in order that we may 'prove it in competition'—the proven reliable 'bench rest way.'

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## BENCH REST MATCHES

### EASTERN REGION

**SOUTHBORO, MASS.:** May 25, June 29, Aug. 17 (registered shoots), Oct. 12 (not registered); Southboro Gun Club, J. W. Baldwin, 5 Milk St., Westboro, Mass.

**STAUNTON, VIRGINIA:** April 26-27, July 26-27, Oct. 4-5 (registered shoots); Stonewall Rifle & Pistol Club, J. W. Perry, 409 Du Pont Ave., Staunton, Va.

**CAPE COD, MASS.:** May 4 (not registered); Crawford H. Hollidge, Cotuit Road, Marston's Mills, Mass.

**PLAINFIELD, NEW HAMPSHIRE:** May 18, July 20, Sept. 14 (registered shoots); Plainfield Rifle Club, Leslie R. Stone, Sec., Plainfield, N. H.

**AUGUSTA, OHIO:** May 17-18, June 14-15, July 19 (night), Aug. 2 (night), Aug. 30-31 (all registered shoots); Reeds Run Rifle Range, P. O. Box 66, Augusta, Ohio.

**DUBOIS, PA.:** Memorial Day weekend (registered); DuBois Rifle & Pistol Club, Inc., P. O. Box 207, DuBois, Pa.

**WILKES-BARRE, PA.:** June 7-8, Aug. 2-3 (registered); Wilkes-Barre Rifle & Pistol Club, William C. Deets, Sec., Pole 141, Harvey's Lake, Pa.

**LEWISTOWN, PA.:** June 21-22 (Pa. State Champ.), July 5-6 (Eastern Region Championship) (registered shoots); East End Blue Rock & Sportsmen's Club, P. J. Aurand, Milroy, Pa.

**EASTON, OHIO:** June 29, Aug. 17 (registered shoots); Chippewa Rifle Club, Donald Snyder, Sec., 260 Clinton St., Doylestown, Ohio.

**ALTOONA, PA.:** July 13 (Eastern Region Varmint Rifle Championship), Aug. 10 (registered shoots); Altoona Rifle & Pistol Club, John Kaylor, 709 4th Ave., Juniata, Altoona, Pa.

**JOHNSTOWN, N. Y.:** Labor Day weekend (registered); Pine Tree Rifle Club, Inc., Wm. N. Hare, Sec., 49 Woodside Ave., Gloversville, N. Y.

**TERRE HAUTE, IND.:** Sept. 20-21 (Invitational registered); Locust Grove Rifle Range, F. S. Yenowine, 1401 North 13th St., Terre Haute, Ind.

**WINDSOR, ILL.:** June 22, July 13, Sept. 7; Windsor Rod & Gun Club, Inc., Windsor, Ill.

**GREENUP, ILL.:** June 29, Aug. 17 (varmint—not registered), Sept. 13-14 (Illinois State Championship); Cumberland County Sportsman Club, Inc.; Herschel E. Owen, Casey, Ill.

### MID-CONTINENT REGION

**ST. LOUIS, MISSOURI:** June 15, Sept. 14 (registered); Bench Rest Rifle Club of St. Louis, James R. Ernst, Sec., 2230 Ferncliff, Kirkwood 22, Mo.

**TULSA, OKLAHOMA:** Apr. 26, May 17, June 21, July 19 (night), Aug. 9 (night), Sept. 6 (all registered shoots), September 26-27-28 **NATIONAL CHAMPIONSHIP SHOOT**; Tulsa Bench Rest Rifle Club, R. G. Berry, Sec., Pawnee, Oklahoma.

**WICHITA, KANSAS:** May 4, June 8, July 4-5-6 (Kansas State and Regional Championships—nights), Aug. 2 (night), Aug. 30-31 (nights), Oct. 5 (all registered shoots); Wichita Bench Rest Rifle Club, Dale Apperson, Sec., 935 No. Doris, Wichita, Kansas.

### NORTH CENTRAL REGION:

**BUFFALO, WYOMING:** Apr. 27 (crow shoot), May 24-25, July 12-13 (nights); Buffalo Outdoor Rifle Club, C. C. Hankins, Sec., P. O. Box 151, Buffalo, Wyoming.

**CUSTER, SO. DAKOTA:** May 18 (chuck shoot), June 7-8, June 29, Aug. 16-17; Black Hills Bench Rest Rifle Ass'n, c/o Walt Siewert, Custer, So. Dak.

### GULF COAST REGION

**CORPUS CHRISTI, TEXAS:** Apr. 12, Aug. 31 (registered shoots); Cleman B. Brown, 602 Sorrell St., Corpus Christi, Texas.

**SAN ANGELO, TEXAS:** May 31-June 1 (Texas State Shoot—registered); F. L. Magoon, P. O. Box 909, Kerrville, Texas.

### SOUTHWEST REGION:

**YREKA, CALIFORNIA:** June 7-8, July 19-20, Aug. 30-31 (not registered—Sat. night and Sunday—Open and Varmint rifles); Yreka Rifle Club, Ray E. Jones, 508 Knapp St., Yreka, Calif.

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March 20, 1958

Dear Phil:

Spring can't be far away as I write this letter although this morning's radio told of deep snow in Virginia and Washington, and sixteen inches in the vicinity of Baltimore. That's a little different from the weather here where we can readily till the garden, following a winter in which rubbers were only needed on a day long occasion. Although the winter has been mild, the days in the village have not been so quiescent. We got out 159 voters out of 300 on the list to oppose some of the objectionable suggestions, by voting for new selectmen and others who would endeavor to keep the town on an even keel. The following day and two nights were spent at a typical New England Town Meeting where person after person rose to his feet to talk for or agin some one of the 145 warrants. Of course, most all of those 145 warrants were on old and new ways to spend money, and you fellows who live in small towns probably recognize how clever some of the towns folks are in finding new ways to spend money, usually that they haven't got.

Some months ago, Bill Curtis and I joined a Retired Men's Club in town, where there are some 80 members, most of whom wake up in the morning with nothing to do and go to bed in the evening with it half done. I have been looking it over pretty carefully to see how many of those fellows can be converted to shooters and, in the near future, I plan to invite a number of them out to my range to wear out the barrels on my guns, and shoot up some of my bullets and powder. The results will be interesting, and although I expect very few of them to join me at Tulsa this year, I do think it is good public relations for our game. We have a long list of folks who are interested in retiring on Cape Cod, and perhaps that is one thing I could write them about when I am performing my civic duty in corresponding with them as to what life and conditions are like on Cape Cod.

Phil, as you know I have been making some real nice .30 cal. bullets, so accurate as a matter of fact that I didn't have anything to adequately test them. I really got steamed up when I heard in recent government tests of greatly superior results of custom made bullets, made from dies that are identical twins to mine. Both Ray Biehler and Mike Walker told me how the custom made bullets had indicated their superiority, and in correspondence, and discussion with Mike at Elmira, we felt that the field was open to still greater improvements. Since the .308 or NATO cartridge seemed to be definitely ahead of the .30-06 or other .30 calibre cases, I decided to follow up the experiments that I had already started by going further with that case.

After a little effort on my part, and some pleading, I got Mr. Kemp at Johnson Automatics Associates, of Hope Valley, Rhode Island, to agree to make me up a .30 calibre barrel with progressive

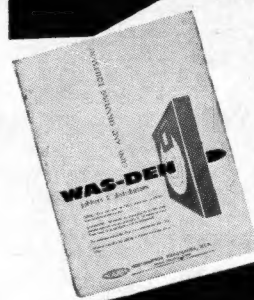
twist from 0 to 12. I had been considerably impressed by the way the progressive twist barrels were shooting for me, and particularly by the fact that they shot cooler and seemed to have more velocity and less recoil. Starting the bullet out at 0 pitch, and gradually progressing to the desired final stage, smoothly, seemed to me to disturb the firing piece less. Some of us feel that this greater disturbance caused by one cartridge or another is closely tied up with the rifle's accuracy, and is perhaps one reason why the .222 has shown up so well, and by the same token, perhaps one of the reasons why larger calibres have not shown up well.

At this stage, Phil, the experiment is turning out marvelously well. I matched the groove diameter to my bullet (.3085) and held the barrel to 26 inches. In my endeavor to keep sufficient length of 12" twist rifling, I had to sacrifice a little of the 0 pitch so the bullet does actually start out at an almost imperceptible angle of rifling. I had an old Mauser action around with German set triggers which I had bedded some five years ago, for a .25 calibre job. I had never finished the outside of the stock but I knew the bedding to be good. The action actually was one of those foreign ones similar in specification to the Mexican 98 Mausers. That seemed to match well with the .308 cartridge and would save me the expense of making up a new stock. Well, my friend, by the way that is shooting, I guess I will have to go ahead and finish the outside of that stock. At this stage, the rifle and I have made a goodly number of groups  $\frac{1}{2}$ " and better, for 5 shots at 100 yards. The weather conditions haven't been the best on the days that I have shot and I really haven't yet tried to take additional bugs out of the rifle or loads. The barrel is not as heavy as the conventional benchrest barrel, and as it is now, is only slightly heavier than a varmint barrel. After I shoot it some more, I may turn it down in an attempt to see whether or not barrel weight affects group size very much. I am of the opinion that we are kidding ourselves a little in thinking that just because a barrel is heavy, it should shoot well.

At any rate, Phil, I have found out that mighty good bullets are being made in my dies, and are well worth the effort and added expense. Big bore shooters should take note of some of the things the fellows in the bench rest game discover. It has been a long while since I shot big bore, but this recent experience has given me a yen to get in to a few of the matches. Incidentally, Phil, I found that the best bullet weight was 150 grains. This is made from the longest Sierra jackets available and brings the weight back in the point at just about the same relative position as the most accurate of our .22 calibre bullets. (Editor's note: The new Sierra 110 grain H. P. bullet is made in this same style and this is believed to be one reason why this light bullet shoots so accurately.)

I guess I have told you enough about big bore stuff with bench rest accuracy, but I should go on for a paragraph or two about a problem that bothers me considerably. Since attending the Elmira meeting, I have received a lot of comments and letters from fellows who are unhappy. I wish, Phil, that these fellows had contacted me earlier, or what would have been better still, to have had them attend the meeting. It apparently takes longer time for thoughts to crystallize than existed between the time of first announcement of the five out of six match idea, and its presentation on the

hold fire ... until you see the



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floor of the Elmira meeting. Unanimous approval was given to this suggestion and of course, I was one of those who so voted. Before and since doing so, I have tried to hold myself open to the viewpoints of others, and I must be frank enough to say that I am finding  
(Continued on Page Ten)



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### Stool Shootin Stuff

(Continued from Page Nine)

some very sincere shooters, long time supporters and true friends of our game, who are opposed to the idea. In my mind, I break the thinking of the opponents down into three basic groups.

The largest group seems to be those who feel that the rule favors the top shooters. These people have a good point because most of the top shooters do have an obvious and frequently demonstrated advantage. They have ability and experience. Most of them shoot several hundred rounds between matches for the one of the average shooter. They know their guns, their ammunition and their game. They have eliminated equipment. They go to the shoot with the mediocre from their methods and confidence in themselves and every item incidental to the game. When they make an error, it is, of course, immediately conspicuous in the match. We have all seen these fellows victims of such errors but how many of you have ever seen them make two errors during the period of the matches or two glaring errors in a season? Contrast that with Mr. Average Shooters target, and tell me if we can honestly assure him that he is getting the same break that the expert fellow is getting. The foregoing is the first of the reasons why I wonder if I voted right.

The second group are those fellows who argue that it is just not sporting. Some deer are foolish enough to give you a second shot, but I doubt very much if a crow would stand and talk back to you if he could say "Sorry, brother, that your set trigger went off a little early—have another try at me." The runner of a marathon can't call for a re-run of the event because he sprained his ankle on the first quarter of the course. He has to depend on the next big event to win his money and it may be a year away or in a far distant race in another part of the country. I think I can see the point of view of these fellows, sufficiently to wonder whether I voted right.

The third category are those good old shooters who support our matches, who just don't want to be classed where they are given something for nothing. They come there and take their chances with the best of the shooters. They add

their smiles and their warm handshakes along with their dollars. Few of them worry or gripe about being at the lower end of the list. They go to the matches without the faintest hope of being the winner, or even the lowest of the top twenty. Their day is a happy one if they have kept from being on the bottom of the list. Those fellows are the most important shooters in our game, and if we hear from enough of those who don't favor the rule change, I am sure I will be convinced that I didn't vote right and that more consideration should be given to the subject before the rule change is nationally adopted.

For the other side of the ledger there is this to be said about the thinking of the boys who are speaking forcefully of the suggested change and it must be borne in mind by all readers that the change definitely was not made with any intent to play up to any particular persons who had been so unfortunate as to get treated harshly by Lady Luck at any of the matches. Indeed it should be said that those who do have episodes of bad luck or tough break were very cool to the idea of the change but recognize that there were others to be considered.

As was pointed out when this rule change was first suggested:

1) The rule compensates for the unnecessary harshness that exists at the present time. Indeed our rules are probably more harsh than any other shooting game.

2) The shooter likes to see his aggregate standing after traveling a long ways to the match. The disqualifying clause eliminates him from the final aggregates.

3) Since one of the purposes of the game is to determine the inherent accuracy of the guns on the line, the present valuating system would throw out the standing of some of the best guns.

Who is there among us who doesn't spend a great deal of time looking at the other fellows equipment and learning from him his tricks that make that equipment perform so well. Indeed we scream loudly when statistics are not broadly enough published to tell us in great detail just how good a gun or load was.

You and others ask me why I voted "Aye" instead of "Nay" on the "five out of six" match discussion. I think the answer is a simple one. It seemed to be giving something to the fellows who consistently shoot both above and below me. I have made some good targets at some holly contested matches, but I'm not a "Top Twenty" guy nor often on the bottom of the list. It is my natural inclination to feel that I should give rather than receive. In that instance, I gave my voice to a picture that I did not see as clearly as I do now. At this moment, I do not know where the majority stand but if you are a shooter who wants to express yourself, do so by writing or talking with the NBRSA Director for the Region in which you reside (Names and addresses on page 8). There is one more important point. If you lose after expressing your opinion, be a sport about it. Gripping won't help our game.

The rule on rests is as hotly controversial and although a referendum among the shooters obviously cannot be accomplished for every subject open to discussion, these differences of opinion are good for our game and I appreciate the comments that I have received.

Cordially yours,

*Crest Stahlhuth*



## THE INFORMATION BENCH

The Information Bench service is available to all Precision SHOOTING readers. With your questions, send a large, stamped, self addressed return envelope for a reply. Selected questions and answers, covering as wide a variety of interests as possible, will be published in these columns. Address your questions to the following people.

Bench rest, varmint and hunting rifles, accessories, handloading, components and shooting methods—**M. H. Walker, THE INFORMATION BENCH, RFD #1, Box 118, Mohawk, N. Y.**

NRA and Free target rifles and shooting—**Roy F. Dunlap, 2319 Ft. Lowell Rd., Tucson, Arizona.**

Sporting handguns and loading—**Kent Bellah, Saint Jo, Texas.**

British arms and shooting—**John C. J. Knott, 2226 North Euclid Ave., Tucson, Arizona.**

**Question:** I would appreciate any help or advice you can give me on a problem I have. I have been target and varmint shooting for 22 years and bench rest shooting for 8 years. Up until last year I have always used low power scopes of 10X to 12X, making up special targets for bench shooting. Last year I obtained a 2 inch 30X Unertl scope with 3/16" Lee dot. A beautiful scope, but I don't seem to understand shooting with such a high power scope.

After carefully setting the eye-piece, and parallax, which seems to be very touchy with these high power scopes, my problem is that most days that little dot just won't stay still on the center of the official bench targets. It don't move slowly—it jumps from one side to the other, and up and down. The only thing I can think of is that the mirage does this.

Are all these high power scopes so critical for parallax setting? Robert Thielen, Wisc.

**Answer:** You apparently have diagnosed your difficulties with the 30X scope without assistance. All high power scopes are difficult to adjust for parallax. It is necessary to select a day which gives little difficulty with mirage, which means a heavily overcast day with very little, if any, difference between the ground temperature and the air temperature. With a 30X scope, these days are hard to find. Movement of the sight picture is a condition which all bench rest shooters using high power scopes have lived with for a long time and one which is unlikely to be eliminated.

Since the power of your scope is quite high, it is necessary to adjust for parallax very closely as the magnification of your high power eye piece will immediately show any discrepancy in the position of the cross hairs and the objective image. In removing the parallax, it is first generally necessary to focus the eye piece on the cross hairs until they are clear and sharp against the sky. Then remove the parallax by adjusting the objective position relative to the cross hairs until no movement is seen. The rifle should be positioned on sand bags in such a way that you can move your head across the axis of the scope while looking through it without disturbing the rifle.

It is better to stand and lean over the rifle so that the clothing does not contact it. If you sit at the bench while doing this job it is possible to disturb the position of the rifle or lean against the bench and cause movement of the cross

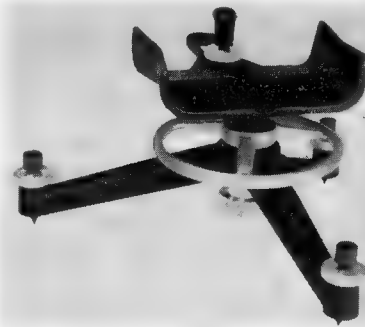
hairs other than that caused by the parallax. **M. H. Walker**

**Question:** Can you tell me what would cause a brand new Sako heavy barrel .222 rifle to abruptly change its point of impact from time to time about an inch and a half—and generally do so in a horizontal plane? Before I even shot the gun I freed the barrel as the forend was obviously warped. Application of machinist blue shows the action to be fairly well bedded. This shift hasn't happened once, but three times. The gun will go for several days with little or no apparent shift and then all at once will start hitting in another place. **Alfred L. Triggs, Kansas**

**Answer:** A shift in point of impact can be caused by so many things that it is difficult to diagnose from long distance. However, here is a list of items which you should investigate.

Assuming that the scope mounts have been checked and are adequately fastened, you should be able to check whether or not the cross hairs are moving by placing the rifle in a firmly situated position, such as in a vise, so that you can tap the scope gently or vigorously as required while watching the cross hairs against some object at a distance. If the cross hairs stay solid as a rock then I would attempt to move the rifle in the stock by pressing with some force against the side of the barrel. It may be that your guard screws have bottomed in the hole or tightened up against a thread before the head has taken up on the guard. If no trouble exists here, then it is likely that the fit of the action in the stock could give a shift.

There are a number of things that can cause shift of impact in the bedding of the action. It can be caused if the receiver is either loose or sprung by the tightening of the guard screws. The bottom of the recoil shoulder, if touching, can cause shift in point of impact. A high spot some place between the guard screws on the under side of the receiver can cause a shift. Certainly you would (Continued on Page Twelve)



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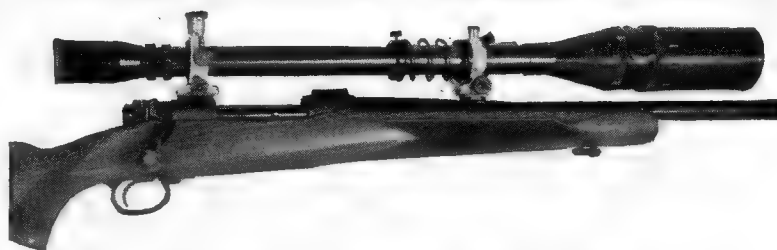


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Some of you, too many of you, do not get acknowledgement or replies to letters you write to the editor. That does not mean that your letters are not welcomed and every one of them read. They help immensely in keeping in tune with shooting and you shooters. But there is limit to the volume of work one old duffer, with one slow pair of hands, can turn out. And the editor does reserve a certain amount of time to do some shooting himself—so, bear with him, please.

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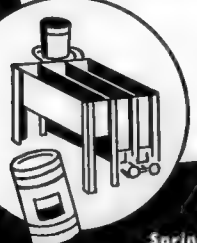
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## The Information Bench

(Continued from Page Eleven)

be able to recognize a wind shift if you are a small bore shooter but it must not be ruled out since the shift is exactly horizontal.

Why don't you try the above recommendations and report your success or failure M. H. Walker

**Question:** I have always used graphite to lubricate the case necks before sizing. In Precision Shooting I've noticed that Wilkins & Schultz have been advertising Molybdenum disulphide and powdered mica as well as graphite. Which of these three is the best lubricant for case sizing (neck sizing)? James Rudolph, Virginia

**Answer:** After trying nearly all the compounds available for lubrication of cartridge cases in sizing, I have come to the conclusion that dry graphite is the best either for neck sizing or full length resizing.

For neck sizing just dip the neck or use one of the applicators with a felt washer as sold by shooting supply outfits. For full length resizing rub the graphite into the body and neck with the fingers. Waterless hand cleaner will get it off your fingers after the job is done. M. H. Walker

**Question:** Having had several handguns and using factory ammunition, I decided to try my hand at re-loading. I wish to stick exclusively to one type of gun; S&W 44 Magnum and vary the loads. I wish you would write me all pertinent details I need as a novice for the above gun and loads. Dr. O. L. Braun, Indiana

**Answer:** First, I think you made the

very best selection in handguns with your Smith & Wesson .44 Magnum. It's the hottest of the hot-shots, is the least temperamental, and will plink with the plinkers. Heavy recoil with big bullets and hot loads is a problem, and especially so for a novice.

Shooting daily, or as often as possible, for short sessions, will allow you to become accustomed to recoil, until you will soon ignore even the hottest loads. Long sessions with heavy loads are not good for anyone.

Jugular bullets in the big Magnum give the least recoil. I prefer the 220 grain Jugular that takes a top load of 26 grains 2400 in Magnum cases. Recoil seems less, or at least slower than commercial loads. Or you can reduce the load and still obtain excellent accuracy with almost any charge down to 16 grains of 2400, which can be fired in either the Special or Magnum case. As this is getting close to the minimum burning range of the powder for perfect ignition, I'll suggest at least 16.5 grains of 2400, which is quite mild, and the recoil is slower than with Unique or faster powders, velocity considered. 6.5 grains of Unique is a good target and plinking load.

Still lighter recoil and more tissue damage is obtained with the 170 grain Hollow Point Jugular, with top charge being 27.2 grains 2400, for 2,000 fs velocity and 1,500 fp muzzle energy, using the Magnum case. A minimum charge is about 17 grains 2400, in either Special or Magnum cases, which is quite mild and a 'moderate' load. The bullet starts at 1,450 fps with 780 fp muzzle energy, but the actual shock is much greater than is indicated by the energy figures due to the pure, soft lead hollow point big bore bullet. This might be all the 'soup' you want or need, and the recoil is light. Try 8 grains of Unique for a target and plinking load.

If the bullet cost is a major consideration for extensive practice shooting, plain base cast bullets are extremely economical to make, if sufficient spare time is available. I can recommend the SAECO Electric Melting Furnace highly, as it will maintain uniform temperature of your alloy, and has a good head of pressure for casting.

If you plan to work during your professional office hours, you might prefer casting 'Shoot From Mould' Prot-X-Bore bullets that do not require rather messy lubrication and sizing. These also have low recoil for their shocking power, and are nearly the equal of Jugular bullets at much less cost. If they are used, it is best to fire a few very low velocity rounds from a perfectly clean bore, until the bore is coated with a thin microscopic coating of zinc (which does not build up), and so long as they are used exclusively no cleaning will be necessary. They are also pure lead, which eliminates the rather expensive tin, and the trouble of mixing an accurate alloy. Kent Belah

## One-Man Boon For Handgunners

(Continued from Page Six)

rifle, and is one of those who have maintained that one could learn to shoot a handgun well with the grips supplied by the gun manufacturer, and Bill has done just that. But now, after only a short time use of Rivers Grips on his .22 pistol, he has to admit that his average scoring has improved at least 5%—and an improvement of 5% in average scoring for an Expert shooter can make a big difference in his ranking in the matches.)



## A Report Of The Calibre .429 Harvey Maglaska Cartridge Test, Development (Continued from Page Five)

over pressures, Jim suggested that I switch to #4198 powder and try 60.0 grains. Firing groups, I went on up in steps to 62.0 grains using the 250 grain bullet. This load plus another of 63.5 grains gave excellent performance and accuracy inside two minutes of angle. The difference in trajectory between one hundred and two hundred yards with the 250 grain bullet was now down to two inches. Reports from the laboratory gave us velocities of about 2800 fps with pressures of 43,000 pounds.

All this time we had been using the balance of the original one hundred Norma cases. The total number of cases that we had left to work with was now about forty five. It appeared that Norma could not or would not supply cal. .300 H&H magnum cylindrical brass. As a result, Jim bought cal. .458 Winchester cartridges, cut them down slightly, necked them to size in the dies and then fired them. Results were perfect. In addition, this Winchester case will hold seventy grains of #4198 as against 65 grains in the heavier Norma case.

Now for some cold blooded, factual data on the cal. .429 Harvey Maglaska cartridge, Apex barrel, 1 in 18 twist, Federal #215 primer, DuPont #4198 powder:

With 250 grain Harvey jacketed bullet, 65 grains of powder:—velocity 2808 fps, foot pounds energy 4349, pressure 42,800 psi.

With 275 grain Harvey jacketed bullet:—60 grains powder—velocity 2460 fps, foot pounds energy 3818, pressures 37,400 psi. 65 grains powder—velocity 2680 fps, foot pounds energy 4450, pressures 43,800 psi.

What this all means is that there is no commercially loaded cartridge in America today that can be used in a standard rifle action that can compare with these figures. These figures definitely place the cal. .429 in the big magnum class, in the class of rifle cartridges like the cal. .300 H&H Magnum and the cal. .375 H&H Magnum. Let us compare:

300 H&H—220 grain bullet, 2620 fps, 3350 fp energy.

375 H&H—270 grain bullet, 2740 fps, 4500 fp energy.

429 Harvey—250 grain bullet, 2808 fps, 4349 fp energy.

429 Harvey—275 grain bullet, 2680 fps, 4450 fp energy.

Furthermore, the cal. .300 H&H Magnum, in order to obtain the above velocities, must operate at pressures from 53,000 pounds up to 60,000 pounds. The cal. .375 H&H Magnum operates at pressures running from 53,000 pounds up to 57,000 pounds.

The cal. .429 Harvey Maglaska functions beautifully with pressures from 42,000 pounds to 44,000 pounds. Accuracy is excellent at two hundred yards, handling very clean and pleasant and in no way is either the cartridge or the rifle being subjected to constant firing at maximum pressures. The cal. .429 will no doubt be loaded to pressures of about 48,000 pounds to 50,000 pounds and velocity and foot pounds of energy will exceed the above figures. I am emphasizing this so that there can be no misunderstanding. The above data is not maximum data—it is normal functioning data.

The end of testing and experimenting is definitely not in sight, but let us appraise what we have so far. We have a cartridge that is adaptable to many

loadings and which will handle bullets capable of stopping the largest game. It is a safe cartridge to handle and reload. Bullets may be cast, swaged or bought. The power of this cal. .429 cartridge has been matched only by the true Magnum cartridges that could be handled only by magnum rifle actions. Now, any person with a Springfield, Enfield, Mauser, Win. Model 70 can have a cal. .429 rifle. It is no longer necessary to go to Magnum actions and custom rifles to obtain the benefits of real hunting power.

My only interest in this rifle and cartridge has been in the testing and load development work. This is my business and I enjoy it. I have no connection with the sales of this rifle or cartridge. For that information, write James Harvey, Lakeville, Connecticut.

One last word, you will note that I have said little about the cal. .429 using the 200 grain bullet. A great deal of shooting was done with this bullet and accuracy was good, but the correct combination of rifling twist and powder has not yet been worked out. The 1 in 18 twist that handles the heavy bullets so well is just too fast for the small 200 grain bullet. It is possible that a 1 in 30 or a compromise twist of 1 in 24 may handle all bullet weights from 200 through 300 grains. The purpose of these tests was not to come up with an all inclusive answer. No one set of tests can do that. Furthermore, it appears likely that #4227 powder may be the answer to accuracy in the light bullet weights plus a slower twist.

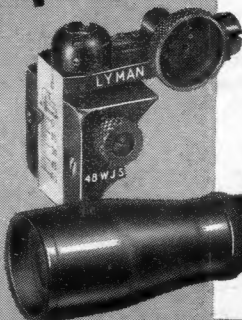
The cal. .429 cartridge loaded with the 250, 275 and 300 grain bullets is now a proven factor. Results, based on rifles out in the field are gradually coming in. It will be some time before these results can be tabulated and definite conclusions drawn. That will be another story. Also there is much more to be written by both Don Cassavant and Jim Harvey.

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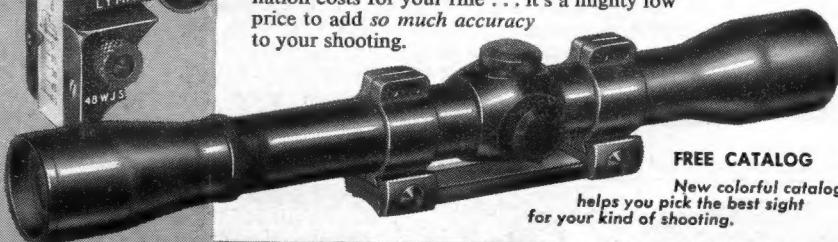


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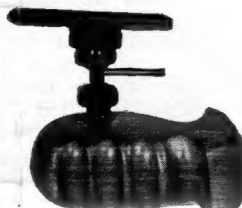
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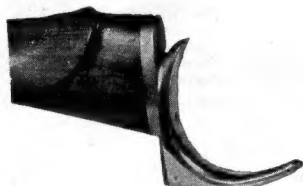


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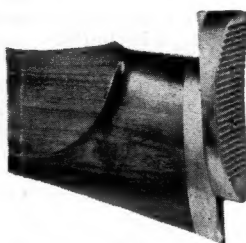


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FREELAND PALM REST, ball type ..... \$18.50  
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(Above kits and trunks are metal covered)  
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(All kits and trunks for Rock Island)  
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FREELAND Fore-end Stop 40X ..... \$3.00  
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## FREELAND'S SCOPE STANDS

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### Factory Ammo Defects

(Continued from Page Seven)

Photo No. 3 shows defects ranging center flash hole, found in over 200 cases of the same lot. I broke some decapping

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pins in attempting to reload these. The G. I. .45 ACP case has a double flash hole that would cause over ignition. The off-center primer in the .22 Hornet would be quickly detected by a handloader. The ultimate goof is the .30 Carbine round without a flash hole. This little jewel could tie up a gun in combat to cost a soldier his life. This is very rare, as I've only seen three such goofs.

The .220 Swift heads show an expanded primer pocket in a soft head, (supposed to be a thing of the past) beside a normal pocket. About half of 300 new primed cases in this lot blew primers when fired with moderate loads. Some locked the action. All were checked in a case gauge and carefully loaded to chamber form the brass while making an accuracy test. Of course all components were from the same lots. One action-locking load was 37 grains 4064 with 55 grain bullets. Excess pressure was not indicated in a new lot of the same make brass with identical components and 40 grains of powder. Soft heads in quantity indicate sloppy quality control, but most action-locking loads are NOT due to soft heads.

The fact remains that weak or defective case heads and bodies DO turn up, and they can cause anything up to and including a very serious injury, or death. This is one reason I prefer rifle actions that support the dangerous part of the case head and help divert gas away from the shooter, such as F. N. Mauser types and the very excellent designed Remington 721 and 722 types that enclose the case head. Some reloaders have expressed an opinion that cases used for factory loads are given a more careful inspection than the ones sold to handloaders. It's true the ammo makers try to discourage handloading, but they are all reputable manufacturers and I do not believe they would dump rejected cases on the handloading market. We have their word of honor that components are of the same quality used in their ammo. It's also true that loaded ammo has passed more inspections than cases alone. For that reason, you may find an occasional case, with a very short neck, or some other defect that would not be in loaded ammo. The lot of .220 Swift cases contained one with almost no neck.

As a dealer, I'm amused at occasional shooters who buy only a box or two of cartridges per year, yet have a definite preference for one brand of ammo they consider "best." Of course it's hearsay or imagination, as they haven't done any worthwhile testing. Even if they find one or more defective cartridges it doesn't necessarily mean that brand is inferior. It's true some calibers may be better in one make, and certainly some lots of the same make are better. Because of variations, one brand may shoot better in a particular gun. One shooter told me brand XYZ gave misfires and was strictly for the birds, while brand PDQ was fine merchandise. Checking his gun I found the misfires were due to less sensitive primers used in a rifle with a weak firing pin blow and excess headspace, plus a minimum length firing pin.

I can't say that one firm produces (Continued on Page Fifteen)



# TRADIN' POST

Classified type ads; no display. Rates: — 10¢ per word per insertion, prepaid. Minimum charge \$1.00. Closing date for ads is the last Saturday of the month preceding publication.

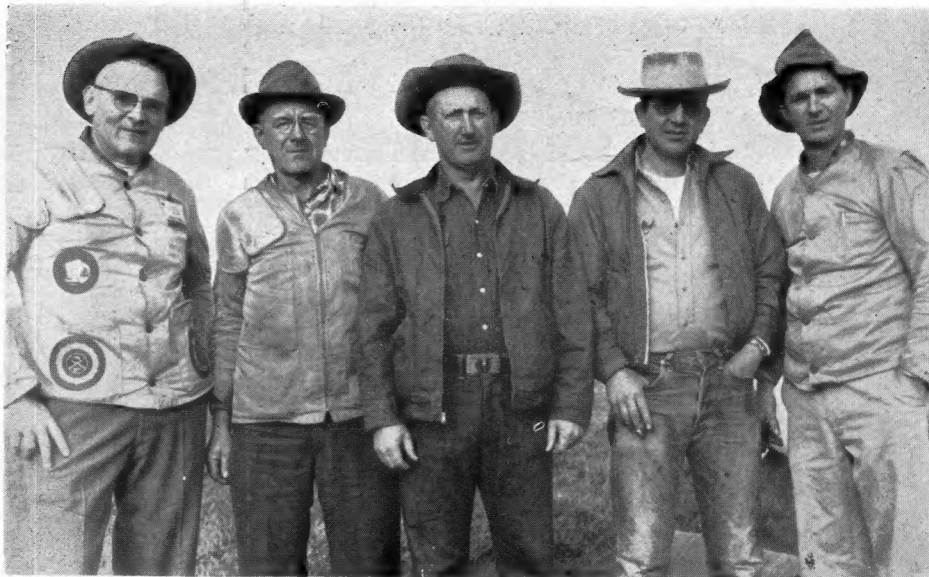
Groups of figures, abbreviations and initials count as words. Hyphenated word counts as two words. Name and address of advertiser is counted. Use full words instead of initials and abbreviations and make your meaning entirely clear — get your

PT Barrels: made in Hope Valley, Rhode Island, by J. A. A. Also standard twist in various and special contours. Johnson Automatics Associates, Inc., P. O. Box 270, Hope Valley, R. I.

**For Sale:** 40x H.B., Olympics, near new, \$120.00. 15X Super Targetspot, excellent, \$68.00. New Anschütz Model 54 Super-Match Rifles, \$248.00. See August 1957 issue. Clyde Speight, Dunbar, Pa.

## Factory Ammo Defects

(Continued from Page Fourteen)  
the best quality ammo in all calibers. I once made a careful accuracy test with .38 Special fodder. Remington Targetmaster proved best of the several lots tested. This may not hold true with all calibers, or even with all lots, although this particular ammo is quite uniform. Later, three bullets from the same lot lodged in my revolver barrel and had to be driven out. These may have been the



California .30 caliber shooters. Left to right: John Weldon, Henry Wright, John Harness, Don Pattee and Bob Perkins.

only three uncharged rounds ever produced in that fodder, and it isn't an indication of inferior ammo. I've found duds in other makes, and have even loaded uncharged cases myself. Yes, we handloaders goof sometimes, and we make a higher percentage of goofs than the firms that mass produce ammo by the train load!

The factory takes almost every precaution to prevent over loads, and I respect their high average quality. I think the most amazing factory product is .22 R. F. cartridges that are sold so cheap, yet are so uniformly good. Also shotshells, that are so good that few hand-

loads are superior and the majority are inferior.

**CORRECTION:** The price of the book "RIFLES—A Modern Encyclopedia" is \$12.50. The price mentioned in the review of the book in February issue was the pre-publication order price.

The increasing entries at State Championship and NRA Sectional junior rifle tournaments is a bright omen for the future of competitive rifle shooting. It is likewise a tribute to the contribution that some senior shooters are making to the future of rifle shooting.

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3. 300 Meter Aggregate score, Du Bois, Pa., 1957, Don Robbins.
4. First and Second places, 300 meters, Du Bois, Pa., 1957, Clair Taylor and Don Robbins.
5. National Match Course, Du Bois, Pa., 1957, 1st, 3rd, 6th, 7th places.
6. National Match 10-shot 100 yd. aggregate, Augusta, O. Al Creighton, .3105".
7. National Bench Rest Championship, Johnstown, New York, 1955, Sam Clark, Jr.
8. 10 Shot 200 yard WORLD RECORD, Du Bois, Pa., 1954, Sam Clark, Jr. Score, or Group, .5276"
9. 10 Shot 200 yard WORLD RECORD, Du Bois, Pa., 1956, H. L. Culver (Present record) Group size .4016"
10. 1000 Yard, Famous Wimbledon match, any sight, 1955, Camp Perry, O. Frank Conway.
11. 1000 Yard, Famous Wimbledon match, any sight, 1956, Camp Perry, O. Frank Conway.\*
12. Newest National Match Course winner, Wichita, Kans., Sept. 28, 1957, H. W. Barton, official new record, .3729" M. A. average.

\* First two-time winner in 57 years.

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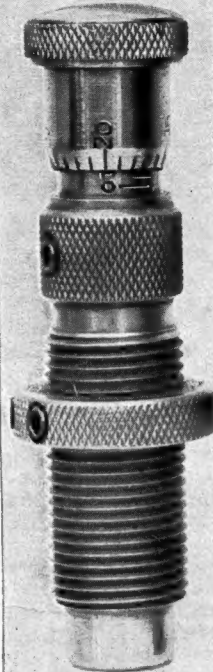
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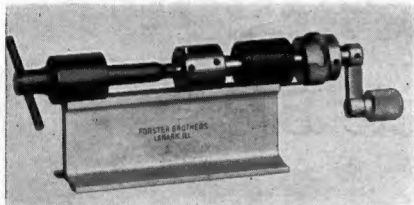
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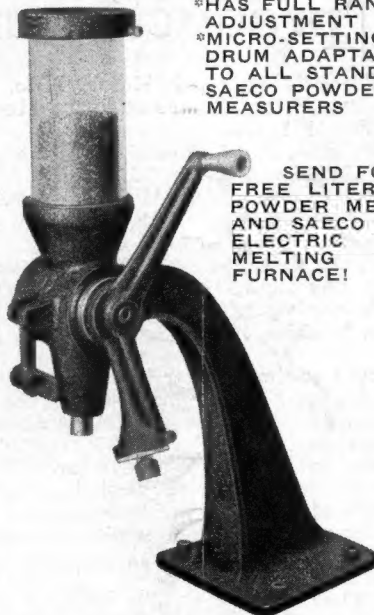
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